

GT4™ Sensor

The growing use of radiological material in a variety of industries and the global threat of terrorism has increased the risk of unwanted radiation exposure. Homeland, physical security and radiation safety professionals and first responders are seeking advanced tools to protect workers and the public.

Defentect's GT4™ sensor monitors radiation in designated areas, identifies the isotope and, via Defentect's DM3™ software, notifies required personnel of a radiological event.

GT4 combines passive surveillance with active alarms. Using advanced algorithms, including time-slicing and pattern-recognition techniques, it can detect threats in as little as one second and provide highly accurate isotopic identification in only a few seconds more. Temperature stabilization guarantees accurate identification results in less than one minute after a power-up, even after a lengthy power-down.

The GT4 provides indication of multiple radionuclides concurrently within one second (real time) at dose rates well below 1 μ R/hr. Multiple identification techniques are used, including peak fitting, least squares analysis, and expert-systems approaches. Special Nuclear Material (SNM) detection can be added to the GT4 with a neutron detection option. Calibration stabilization and watertight housing make the GT4 functional in all weather conditions, while automatic background updates provides reduced maintenance costs.

During a radiological event above a preset threshold, isotope ID, confidence level, count and date/time stamp are sent to the DM3 messaging system.

With sensitivity of 1 μ R/hr and typical response time of 1 millisecond, the system transmits data corresponding to a radiation event back to the DM3 server.

Sensors can be positioned adjacent to security cameras to provide visual identification of a threat or hidden above ceilings or behind walls to prevent being compromised. Appropriate alerts are triggered through the DM3 control panel. These alerts can include messages to PDAs, cell phones, pagers or other mobile clients, as well as communications to other command and control systems to better incorporate radiation detection into the security framework of the organization.

Through DM3, the system's sensors can be paired with a facility's security network for truly integrated Intelligent Threat Awareness.

Key GT4 features include:

- ANSI N42.42 compliant data format
Auto calibration & background update
- Background Subtraction
- Remote access
- NEMA IV Security Enclosure (illustration shows transparent cover)
- 3" x 3" NaI Detector (LaBr optional)



GT4™ System Specifications	
GT4 sensors, integrated with Defentect architecture and connected to a server, create a grid of threat-level radiation protection. GT4, networked to DM3 software, triggers alerts to incident command centers or mobile clients.	
<i>Operating Indicted Use</i>	Gamma Detection: 18keV—3.0MeV
<i>Isotope Energy Library (Note 1)</i>	Onboard MCA for energy identification 99 isotopes can be defined
<i>Sensitivity</i>	1 µR/hr for Cs-137
<i>Sampling Rate</i>	1 Millisecond
<i>Temperature Range</i>	-20 to 50°C
<i>Scintillation</i>	3 Inch Diameter x 3 Inch Thick NaI (TI) Crystal; (optional LaBr)
<i>System Chassis</i>	NEMA IV rated security enclosure
<i>Power Consumption</i>	120/240V 15W universal power supply; internally runs from 9-16V so may be operated from 12V deep cycle battery (optional configuration)
<i>Dimensions (standard enclosure only)</i>	14.2" L x 6.5" H x 10" W; 11.5 lbs. with NaI detector (with 3" x 3" internal detector)
<i>External Connector</i>	Panduit INDUSTRIALNET™ TX5e™ Coupler Part Number: IAEBHC5E Mates with: INDUSTRIALNET™ TX5e™ Shielded Plug Part Number: MPSI588T

Note (1): System may be loaded with gamma-emitting Nuclides per IAEA Code of Conduct report.

Sensitivity of the GT4™ Radiation Sensor

Source Activity In Curies (Ci)	Approximate Detection Distance in Feet
50 μ Ci	13
100 μ Ci	18
10 mCi	165
50 mCi	325
500 mCi	800
1 Ci	1,000
100 Ci	3,100

GT4™ Sensor w/ Isotope Identification

1 μ R/hr required for isotope identification. The table was calculated for Cs-137 using the RadPro Calculator.

*<http://www.radprocalculator.com/Gamma.aspx>

For more information or to schedule a web demonstration, please call toll free: 888-868-8386.